REMARKS / AGRUMENTS

Applicant(s) respectfully traverse this rejection for the reasons set out below, and ask the Examiner for reconsideration.

Summary of the Office Action

Claims 1, 2, 6, 11, 12, 18, 39, 40 stand rejected under 35 U.S.C. 112 (2) as allegedly being indefinite;

Claims 1-7, 11, 12, 15-24, 30 and 39 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by U.S. 6952456 of Aiello (hereinafter- Aiello).

Claims 8, 9, 13, 25, 26, 31 and 40 stand rejected under 35 U.S.C. 103(a) as allegedly being anticipated by Aiello.

Claim 10 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable by Aiello in view of U.S patent application 2003/0026200 of Fu et al. (hereinafter- Fu).

Claim 14 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable by Aiello in view of U.S patent 7088795 of Aiello (hereinafter- Aiello2);

Claim 29 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable by Aiello in view of U.S patent application 2002/0130811 of Voitlaender et al (hereinafter - Voitlaender);

Claim 32 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable by Aiello in view of U.S patent application 2003/0193430 of Gresham et al (hereinafter - Gresham);

Claims 33-37 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable by Aiello in view of U.S patent application 2004/0013166 of Goodings (hereinafter - Goodings);

Claim 38 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable by Aiello in view of U.S patent application 2004/0022304 of Santhoff et al (hereinafter - Santhoff).

Drawings 1-4 were objected by the examiner. A new set of drawings is attached to this response.

Response to the §112(2) rejection of claims 1, 2, 6, 11, 12, 18, 39, 40

The examiner rejects claims 1, 2, 6, 11, 12, 18, 39, 40 under 35 U.S.C. 112 (2) as allegedly being indefinite and argued that "there is not step of providing a positive recitation for allowing variation to occur, thus the limitation is not given much weight to the claim".

The applicant argues that the stage of allowing is described in various portions of the patent application (see, for example: paragraphs 0014-0021, 0038, 0039, 0040, 0043, 0044, 0045, 0046, 0047, and the like) and that a stage of adjusting parameters (setting parameters, providing trade-offs) as well as the concept of an adjustable system or adjustable method is known in the art. The examiner himself admitted (for example- office action, page 13, in relation to claim 25) that adaptive processes were known in the art: "*Aiello does not disclose an adaptive process, however it is well known in the art at the time that the invention was made to apply an adaptive process to more accurate determination of a selection process thus providing more efficiency performance*".

Amendment of claims

Claims 3, 5, 6, 7, 8, 10, 13, 14, 15, 16, 17 remain unchanged.

Claims 18-23, 30-31, 34 and 39 were deleted without prejudice.

In a nut shell, independent claims 1, 11 38 and 39 were amended (among other amendments) such as to include two limitations: (i) A transmission (or reception) is performed using orthogonal frequency division multiplex (OFDM), and (ii) and a varied transmission (or reception) parameter is a variation of pulse repetition frequency by removing multiple frequencies from a frequency hopping sequence.

These claims were further amended by removing the stage of allocating each of a plurality of frequency sub-bands and by removing the last 2-3 sentences of each claim.

Claim 2 was amended by adding a limitation from original claim 1.

Claim 4 was amended by adding a limitation cited in the specification (paragraph 0045).

Claim 9 was amended to remove a certain limitation (now included in claim 1 - limitation relating to OFDM) and to remove another limitation (relating to zero padding).

Claim 12 was amended by adding a limitation from original claim 1.

New claim 41 was added and includes a limitation that originally belonged to original claim 40.

No new matter was introduced by the amendment.

Response to the 102(e) and 103(a) rejection of claims 1-40

Two limitations were added to each of the independent claims of US patent application 2004/0077306, thus all claims (claims 1-17, 24-29, 32-33, 35-38 and 40-41) include these limitations.

Those limitations are:

(i) A transmission (see: claims 1, 38 and 40) or a reception (see: claim 11) includes using orthogonal frequency division multiplex (OFDM).

(ii) A varied transmission parameter (see: claims 1, 38 and 40) or a varied reception parameter (see: claim 11) is a pulse repetition frequency, wherein the variation is achieved by removing multiple frequencies from a frequency hopping sequence.

The claims of patent application 2004/0077306 after being amended describe a patentable subject matter that substantially differs from Aiello, from the following reasons:

1. U.S patent application 2004/0077306 describes a system and a method that varies a pulse repetition frequency (PRF) by removing multiple frequencies from a frequency hopping OFDM sequence. After the removal a sequence of OFDM pulses are conveyed over the remaining frequencies (such as frequencies

Fa, Fb, Fc, Ff and Fe of figure 1). Each OFDM pulse can include multiple sub-carriers, each sub-carrier includes an energy components, whereas the polarity of that energy component indicates whether it represents "1" or "0" valued information. This OFDM transmission scheme is in contrary to Aiello which merely (when applying on off key modulation) does not transmit a pulse in response to a "0" valued information bit. It is noted that Aiello himself admits that his system can modify the pulse repetition rate by altering a modulation scheme and not by applying the on-off keying scheme. The PRF can be altered by shifting from on-off keying to pulse amplitude modulation (see: Aiello, column 7, lines 19-30).

2. Aiello does not describe an OFDM system. The examiner argued (in relation to original claim 9) that "Aiello is not explicit about using orthogonal frequency division multiplexing (OFDM), however, it would have been obvious to one skilled in the art at the time of the invention was made to use orthogonal frequency division multiplexing in the system of Aiello because OFDM is a robust technique for efficiently transmitting data over a channel providing optimal bandwidth efficiency. Furtehr OFDM allows resolution and recovery of information that has been modulated onto each sub-carrier". The applicant argues that there is no motivation or suggestion to use OFDM in the system of Aiello as Aiello uses a TDMA system in which all users share the same frequency band but at different time slots.

3. Aiello makes a clear distinction between frequency hopping techniques and base band techniques (see: background section of Aiello, especially column 1, line 41- column 2, line 8) and indicates that his transmitter is a base band transmitter (column 2, lines 28-53). In addition, Aiello describes his base band transmitter as overcoming the deficiencies found in the prior art (including spread spectrum frequency hopping) (see: Aiello, column 2, lines 35-37).

4. The examiner indicated (in relation to original claims 33-37) that a combination of Aiello and Goodings teaches of a frequency hopping sequence being applied in a ultra wideband system. The applicant argues that Goodings does not describe a ultra wideband transmission system and especially does not

describes an OFDM frequency hopping transmission system, thus the combination of Gooding and Aiello does not teach or suggest the limitations that are added to claim 1 (and to all other independent claims). The applicant further argues that Aiello teaches away from a combination with Goodings, as Aiello indicates that frequency hoping spread spectrum techniques are substantially different than his ultra wideband transmission system.

5. The applicant argues that the removal of frequencies form predefined frequency hopping sequences maintains non-collision characteristics of the frequency hopping sequences, thus enables to operate multiple pico-nets with a low collision probability. Aiello uses TDMA and can not guarantee a non-collision between adjacent pico-nets based upon a value of an information bit that is not known in advance.

6. Claim 9 was amended in order to indicate that the transmission should include cyclic prefix transmission (not illustrated by Aiello) and not just zero padding.

7. A new set of drawings is attached to this response.

Conclusion

The applicant believes that in view of these arguments the claims of US patent application 2004/0077306 should be allowed.

Respectfully submitted,

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